JUN 25 1906
SALEM, MASS.

VOL. IV. JUNE, 1906 NOS. 59-60

MYCOLOGICAL BULLETIN

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Mycological Bulletin

Nos. 59-60

W. A. Kellerman, Ph. D., Ohio State University
Columbus, June, 1906

THE EDITOR'S EASY CHAIR.

APPRECIATION.—Some appreciative letters have been received from subscribers relative to the improved appearance of the BULLETIN, and for these, sincere thanks are hereby returned. I can not forego the pleasure of allowing others to enjoy with me this portion of one of the letters received: "The little BULLETIN is filling a place in botanical literature hitherto wholly unoccupied. Now as you 'wax fat,' do not change the nature of the publication. If you feel like moving up into the field of 'scientific mycology,' you will leave behind the people for whom it was designed, and they would then have nothing—just as they had nothing of the kind before the BULLETIN was started. Keep it along the present line."

ACKNOWLEDGMENTS—I have to thank Miss Hyde and Messrs. Hard and Smith for both interesting articles and illustrations of striking mushrooms contained in this NUMBER.

MORE PARTICULARS.—I can add that a short quotation will be found from Dr. Harshberger on p. 22, relative to the Peziza on which Mr. Smith discourses. It will be noted, too, that a pen and ink sketch of Mr. Hard's subject (Gyromitra esculenta) was published on p. 227. The half-tone in this NUMBER almost does justice to the fine specimen. Miss Hyde's Verpa is not found every day, and we are fortunate in having been able to photograph the specimens which she brought us.

STROBILOMYCES.—This peculiar tube-bearing mushroom was illustrated on p. 100, and now Mr. A. F. Lane, Milwaukee, Wisconsin, sends us a photograph of *dry specimens* (Fig. 189), which can very appropriately find place here. See p. 240.

ABOUT GYROMITRA ESCULENTA Fr.

M. E. Hard.

Gyromitra means a much wrinkled hood. There are seven species in this genus. It frequently grows very large, as the specimen in Figure 184 will indicate, which is eight inches high and five inches across the cap. This was found in the woods near Chillicothe.

The cap is often rounded and regular as in the specimen photographed, but frequently it is deeply lobed and very irregular, gyrose-wrinkled, bay-red, hollow, white within, uneven.

The stem is white, stout, stuffed or hollow, covered with a mealy substance; it is two to three inches long.

The spores are elliptical, binucleate, yellow, 20-22 mic. long.

This was formerly called *Helvella esculenta.* It is often very irregular and attached to the stem in two or three places. It is easily recognized from its bay-red color and its brain-like folds.

It grows beside old stumps and prefers a sandy soil. It is said to be injurious to some people. I have eaten it without any bad results, but I was careful to use only young and fresh specimens. I should advise not to eat it unless carefully parboiled. It is considered dangerous.

NOTES FROM MUSHROOM LITERATURE, I.

W. A. Kellerman.

A summary of interesting articles on Mushrooms found in various periodicals and brief quotations will occupy some space in the BULLETIN when available. We call attention first to a note published in Torreya recently by Mr. C. C. Hammer. These are his words:

"A Note regarding the Discharge of Spores of Pleurotus ostreatus.—A few evenings since a friend brought me a fine plant of the above species, consisting of about twenty-five pileoli, growing from a common base and arranged in the form of a large rosette, about twelve inches in diameter and of about the same height. Knowing the plant to be very fresh, not yet forty-eight hours old, I decided to keep it and cook it upon the following day. For the night it was left upon my study table, in the same position in which it grew (gills downward). Early the next morning my attention was called to the plant by my wife who asked me to come and observe it. It happened to be exposed to a very strong morning sunlight, which entered the window three or four feet away. The spores were arising from the plant like tiny spirals of smoke or steam, to the height of two or three feet, making to us a very strange sight. At first I doubted if the "smoke" were really spores, but after a careful microscopic examination of some which were caught upon a slide, this point was definitely settled. Perhaps other agarics spore in a similar manner, but never having had conditions favorable before I cannot say. Certainly the fact was interesting to me and for this reason I publish it. I have upon numerous occasions observed the momentary expulsion of spores from fungi such as *Bulgaria rufa* and *Sarcoscypha floccosa,* but with these plants the spore-discharge seems to occur when they are first touched, and then only."

ANOTHER.—New species of Mushrooms have been described by Professor Atkinson in the Journal of Mycology, some of which should be recounted here:—

"PRELIMINARY NOTES ON SOME NEW SPECIES OF FUNGI.—AGARICUS CRETACELLUS, Atkinson, n. sp.—Plants gregarious, sometimes a few joined at the base; 5-8 cm. high, pileus 4-7 cm. broad, stems 6-10 mm. in thickness. PILEUS white convex to expanded, thin, smooth, sometimes inclined to be slightly viscid in wet weather, when leaves cling to the surface; sometimes with slight yellowish stains, flesh white with a tinge of pink sometimes. GILLS narrow, 3-4 mm., narrowed behind, free, first white, then pink, and later dark greyish brown, not becoming blackish. The caps are sometimes fully expanded when the gills show only a slight tinge of pink. SPORES 4-5x3μ. STEM tapering from the enlarged base, white, smooth above the annulus, chalky white below and covered with minute powdery scales often arranged in irregular concentric rings below; stem solid but the center less dense. ANNULUS persistent, white, smooth above, the lower surface with very fine floccose scales similar to those on the stem from which the annulus was separated. Odor and taste of almonds, as in A. arvensis. Growing in leaf mold, woods, Cascadilla creek, Ithaca, N. Y. C. U. herb. No. 5359, collected by Geo. F. Atkinson, September 7, 1900.

"AMANITA FLAVOCONIA, Atkinson n. sp.—Plants usually scattered, sometimes gregarious, 6-12 cm. high, pileus 3-8 cm. broad stems 4-15 mm.



Fig. 134. GY-RO-MI'-TRA ES-CU-LEN'-TA. See text. M. E. Hard, Chillicothe, Ohio.

thick. PILEUS convex then expanded, plain or broadly umbonate, fleshy, very thin except at the center, chrome yellow to orange yellow, darker when young and on the center, smooth, that is not striate, viscid, flesh white, covered with numerous small flocculent patches or heaps of fragments of the yellow powdery volva, which is easily removed and in wet weather sometimes is entirely absent from the pileus. GILLS broad in the larger specimens, narrow in the smaller ones, 4-8 mm. broad, rounded at each end, free, not very crowded, white, very finely serrate or fimbriate from threads which attached the gills to the stem in the young plants. SPORES oval-ovate, white, 6-9x4-6μ. STEMS stuffed, straight or flexuous, slightly tapering from the bulbous base, and at the apex broadening slightly, covered with flocculent scales, tinged with sulphur, fine sulphur powder above the annulus, portions below the annulus covered with powdery masses or particles of the universal veil. Bulb not very prominent, smooth or rarely somewhat cracked, powdered with remnants of the volva. ANNULUS sulphur yellow or chrome yellow, membranous. The VOLVA or universal veil consists of a yellowish powdery substance which separates into numerous powdery masses, covering the pileus and base of the stem, but which easily falls away.

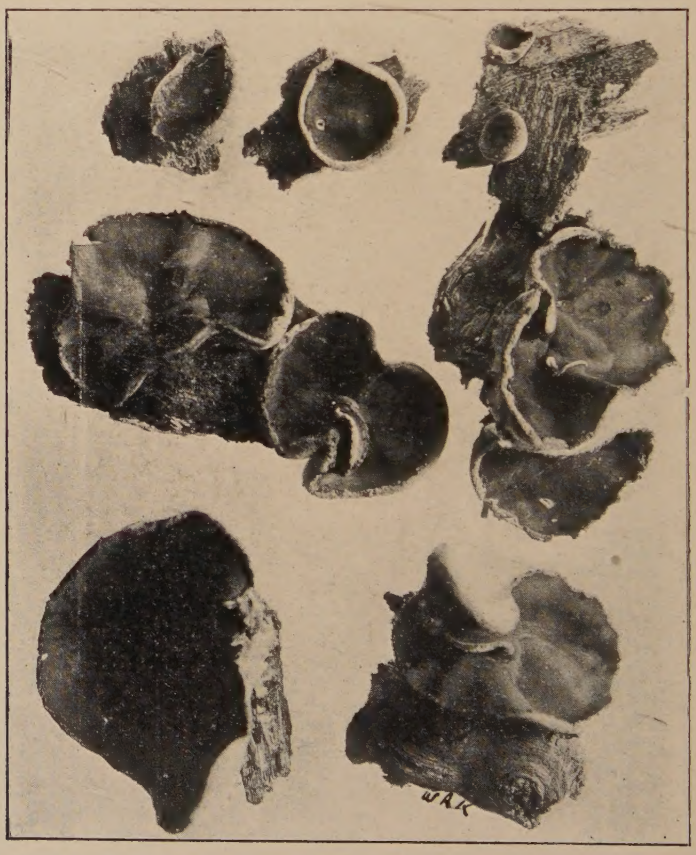


Fig. 185. PE-ZI'-ZA RE-PAN'-DA. Photo from specimens collected at Columbus, Ohio. Arthur L. Smith.

ANOTHER PEZIZA.

Arthur L. Smith.

Peziza repanda Wahl. is a small, rather inconspicuous fungus growing on old wet logs. Specimens were found May 11, 1906, on an old elm log in the O. S. U. woods. In the dark, moist woods, one sees only a group of light, fleshy fungi; but taken out into the sunshine, they become remarkably beautiful objects. The cups are translucent, and the sunshine gives them a delicate golden brown. This, with the purplish brown color of the dry cup rims, produces an effect highly artistic.

When first distinguishable, the future cup is a tiny white knot on the surface of the log. This grows, so that soon a hollow sphere, with an

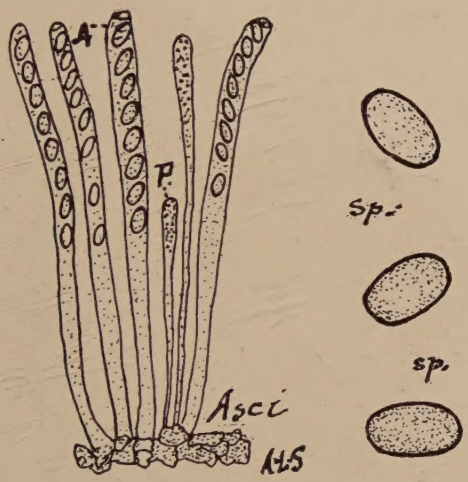


Fig. 186. Pe-zi'-za re-pan'-da. Magnified sketch of a portion of the fruiting layer (inner portion of cup)—showing *asci* accompanied with *paraphyses* and three spores very highly magnified.

opening at the top, is produced. But soon this begins to flatten and expand laterally, at last producing an irregular flattened disk with small upturned edges. The disks are irregular in outline. In diameter they vary from 2—6 cm. On the outside of the cup is a scurfy white layer. The remainder is a fleshy tint. In drying the tissue becomes darker, and may even reach a purplish brown. The exposed edges dry out and change color first, then later the whole plant goes through the same change.

There are two primary layers in the structure of the Pezizas; the inner fruiting layer or hymenium, and the outer sterile tissue. This latter is composed of several more or less distinct parts, whose names would only add to our burden. On the arrangement and structure of these sterile layers, the classification is largely based. E. J. Durand, of Cornell, the authority on fleshy Discomycetes, has largely extended the use of these characters.

On the hymenial surface are borne the asci, or large mother cells of the spores, and a few sterile paraphyses, or accessory hairs. In these specimens the latter are few, very much less numerous than in the other

Pezizas examined. They are also shorter than the average of other species. The asci are quite large, 270x12 mic. In each are eight spores, which are discharged when ripe, at the free end. These spores are smooth, thin-walled, hyaline, and non-nucleate. Size 14x9 mic.

Some young specimens observed from May 11 to May 25 discharged spores during that time. The spores are often seen as little white clouds hanging above the cups. This phenomenon was often seen several times daily during the whole period. The immense number of spores given off by each Peziza can be more easily imagined than expressed.

Explanation of the figures.—The split-tone fig. 185 represents several plants natural size. Two above are immature—the cups scarcely open. The others show various forms assumed on maturity. Fig. 186 gives in outline, much magnified, several asci with spores, intermingled with which are two paraphyses; three spores are shown still more highly magnified.

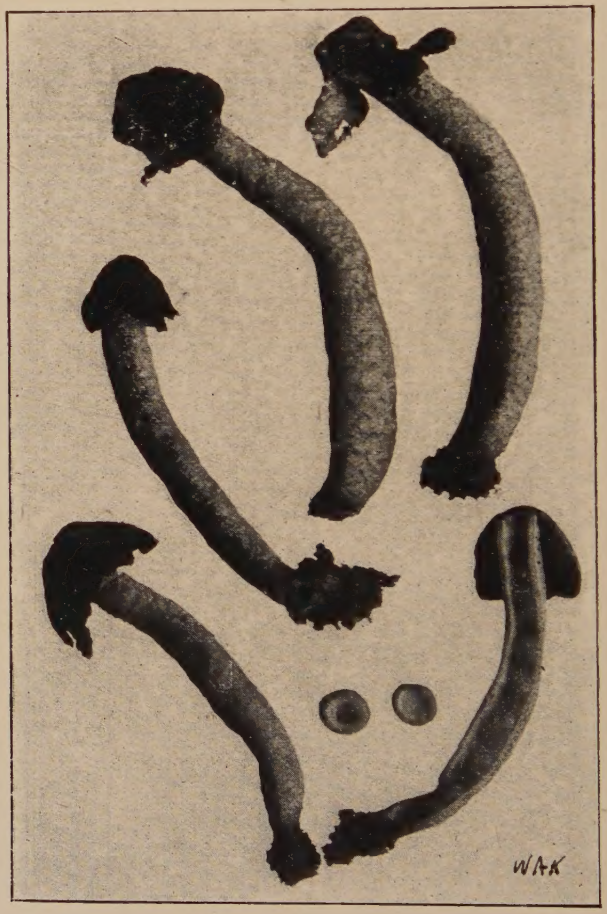


Fig. 187. VER'-PA DIG-I-TAL-I-FOR'-MIS. Photo from specimens collected at Lancaster, Ohio, by Miss Hyde. See text for fuller explanation.

NOTES ON A VERPA.

Edith Hyde, Lancaster, O.

The interesting fungus shown in Fig. 187, called by the botanists *Verpa digitaliformis,* was found north of Lancaster, in a cool, moist and shady ravine early in May. The color of its pileus, or cap, is a kind of olive-umber, while the stem is nearly white, with a very slight reddish tinge. The pileus is campanulate, or bell-shaped, ½—¾ in. high, fitting over the stem, but not attached except at the very top. Its surface has the characteristic smoothness of the *Verpas.* The stem appears smooth to the naked eye except for the few reddish rootlike shreds found at the base. It is filled with a loosely fibrous pith. It is about 3—4 in. high, and one-third to three-quarters inch thick.

The asci are long, regular, colorless cells, situated on the under side of the cap. Each ascus produces eight spores within. Figure 188 shows four of these asci, one of which is spontaneously breaking open at the end in the characteristic manner and thus liberating the spores. The spores are elliptical and almost free of the granular contents, so conspicuous in the spores of some genera of fungi.

This species is edible according to the mycophagists, and resembles the Helvella in its delicacy. It is said to be on sale in the markets in Italy. It was named by Persoon, an eminent European botanist, a century ago. He gave it the name *digitaliformis* (meaning finger) because suggestive of the shape of the pileus, which fits like a thimble over the stem. The generic name *Verpa* (meaning a rod) was probably given to the genus because of the prominence of the rod-like stem.

This mushroom belongs to the family *Helvellaceae.* This family includes four important genera, which may be divided into two groups.

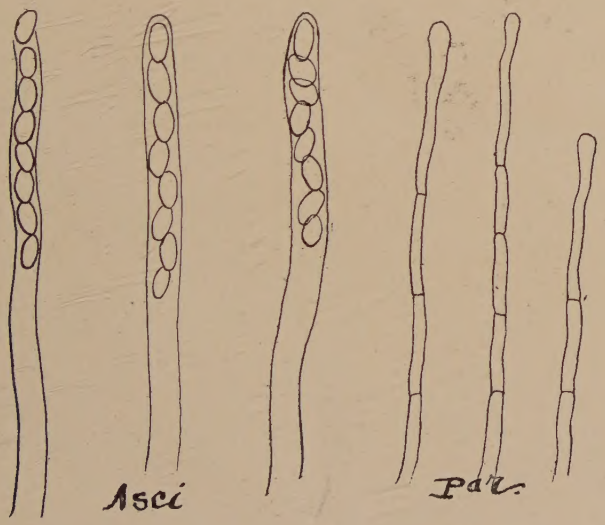


Fig. 188. VER'-PA DIG-I-TAL-I-FOR'-MIS. A sketch of *asci* with *spores,* also *paraphyses* highly magnified.

The first, including the *Helvella* and the *Verpa,* is characterized especially by the pileus or cap being free from the sides of the stem. The second group, including the *Morchella* and *Gyromitra,* has the pileus entirely attached to the stem. These genera need not be confused, since the *Helvella* has a drooping pileus, irregularly lobed or waved, while the *Verpa* has the drooping pileus but comparatively smooth and with an entire margin. The *Morchella,* on the other hand, has the pileus attached to the stem and covered with deep irregular pits, while the *Gyromitra,* also attached, is composed of rounded, variously contorted folds.

Explanation of figures:—The accompanying half-tone is a life size reproduction from a photograph of five of the specimens. The one in the upper right hand corner is old with a split and ragged pileus; the one just below it is a vertical section, showing the pithy contents of the stem. The two circles in the middle below are cross-sections of the stem. The outline sketches, Fig. 188, represent asci and paraphyses; one ascus is broken open to discharge the spores. The paraphyses or slender cells accompanying the asci have septa, or cross-walls, which is not a common characteristic. The plants in the half-tone are represented natural size; the outline figures of asci, paraphyses and spores are highly magnified.



Fig. 189. STRO-BI-LOM'-Y-CES STRO-VI-LA'-CE-US. A mushroom belonging to the family BO-LE-TA'-CE-AE—having pores on the under side of the cam somewhat similar to a *Polypores.* The peculiar wart-like tufts give it a strange aspect and seen in the field or open woods it would never be mistaken. This half-tone from a photograph taken in the winter by Mr. A. F. Lane, Milwaukee, Wisconsin, illustrates the appearance of a preserved dry specimen.

The Mycological Bulletin is issued Monthly, Price 25c. Copies of Vol. II (1904) and Vol III (1905) may be had for 50 cents each, or cloth bound copies for 75 cents. No. copies remain of Vol. I (1902). Address W. A. Kellerman, Columbus, Ohio

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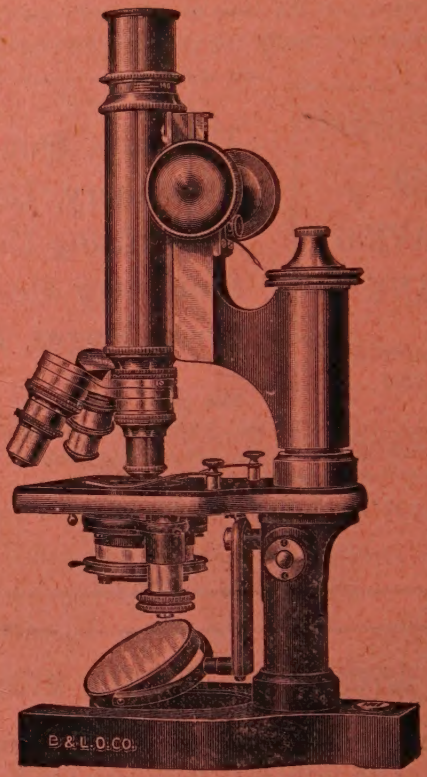
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